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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,021	05/02/2005	Matthew Gibson	BTW-093US	9489
959 7590 11/28/2007 LAHIVE & COCKFIELD, LLP ONE POST OFFICE SQUARE BOSTON, MA 02109-2127			EXAMINER SEDIGHIAN, REZA	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/533,021

Applicant(s)

GIBSON, MATTHEW

Examiner

M. R. Sedighian

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/2/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

1. This communication is responsive to applicant's preliminary amendments of 5/2/05. The amendments have been entered. Claims 1-21 are now pending.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a light detector that comprises of an optical power monitor for monitoring the optical power output of the apparatus, and a control means that is arranged to control the light output of apparatus in response to the light detected by the light detector" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13-15 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 13, it is not clear about a light detector that comprises of an optical power monitor that monitors the optical power output of the apparatus. Fig. 1 only shows an optical detector 13. Which light detector comprises of an optical power monitor that monitors the optical power output of the apparatus??

As to claim 14, it is not clear about a control means that is arranged to control the light output of apparatus in response to the light detected by the light detector. Which control means is arranged to control the light output of apparatus in response to a light detected by the light detector.

As to claim 15, it is not clear about the control means that is arranged to control the light output of apparatus in response to the light detected by the light detector, wherein the optical power monitor and the control means together monitor and control the optical power output of the apparatus. Fig. 1 only shows a light detector 13.

As to claim 21, it is not clear about a source of electrical current that is arranged to apply a generally constant electrical signal to counteract any generally constant background optical noise detected by the light detector. Which source is the source of electrical current?? Which source of electrical current apply a constant electric signal to counteract a constant background optical noise, which can be detected by a light detector??

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-10, 12, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moeller (US Patent No: 6,236,495 B1) in view of Islam et al. (US Patent No: 7,197,245).

Regarding claims 1 and 3, Moeller teaches an optical communication apparatus (fig. 1), comprising: an optical integrated device comprising an input (the input to multiplexer 1 in fig. 1), one or more integrated optical components (L1, Ln, 1, fig. 1) and an output (B, fig. 1) arranged such that light received by the input is propagated by the one or more optical components (1, fig. 1) and exits the device as an output light beam (col. 4, lines 55-59); a light beam diverter (2, fig. 1) arranged to divert the output light beam (col. 3, lines 36-41, col. 4, lines 6-20); a light detector (9, fig. 1) arranged to detect the output light beam (col. 4, lines 55-59); a polarizer (4, fig. 1) located between the light beam diverter (2, fig. 1) and the light detector (9, fig. 1), and being arranged such that if light of a predetermined polarization is received by the optical integrated device, the polarizer propagates light of that polarization only, thereby substantially prevent light other than that of the predetermined polarization being detected by the light detector (col. 3, lines 47-50, col. 4, lines 22-26). Moeller differs from the claimed invention in that Moeller does not specifically disclose the light beam diverter diverts only a sample portion of the power of output light beam. However, it well known and it is obvious that optical beam diverters such as optical circulators, beam splitters, and optical dividers can divert only a sample portion of a light beam to provide further measurements and/or signal processing. For

example, Islam teaches a beam diverter (761, fig. 7) that samples only a fraction of a light beam (col. 18, lines 65-67, col. 19, lines 1-5). As it is taught by Islam and as it is well known, it would have been obvious to a person of ordinary skill in the art at the time of invention that a beam diverter, such as beam diverter 2 (the circulator) of Moeller can divert only a sample portion of the power of the transmitted light beam to provide further signal compensation and/or signal processing or measurement

Regarding claim 2, Moeller teaches a light source (L1, fig. 1) that generates light of the predetermined polarization (col. 3, lines 36-37, 48, col. 4, lines 6-15).

Regarding claim 4, Moeller teaches the light source (L1, fig. 1) is a laser (col. 3, line 37).

Regarding claim 5, Moeller teaches the light source comprises an integrated optical component of the optical integrated device (col. 4, lines 6-11).

Regarding claim 6, Moeller teaches an optical signal transmitter (L1, fig. 1).

Regarding claim 7, Moeller teaches the optical integrated device comprises a semiconductor device (col. 3, lines 36-37).

Regarding claim 8, Moeller teaches the integrated optical component comprises a modulator (col. 4, lines 8-9).

Regarding claim 9, Moeller teaches the modulator applies a modulation to the light received by the input of the optical integrated device (col. 3, lines 36-37).

Regarding claim 10, as to a beam diverter that comprises a beam splitter, Moeller teaches a circulator that diverts the transmitted light, and it is well known that an optical circulator such as circulator 2 of Moeller can split part of the transmitted light.

Regarding claim 12, Moeller teaches the light detector (9, fig. 1) comprises a photodiode. (col. 3, lines 41-44).

Regarding claim 16, Moeller teaches the predetermined polarization of the light comprises a predetermined plane polarization (col. 4, lines 9-13).

Regarding claim 17, Moeller teaches the predetermined polarization comprises horizontally plane polarized light (col. 4, lines 9-12, the TE mode).

Regarding claim 18, Moeller teaches the polarizer comprises a plane polarizer (col. 3, lines 46-49).

Regarding claim 19, as to a lens located between the beam diverter and the light detector to direct the light beam such the light can be detected by the light detector, it is well known to incorporate an optical lens along the transmission path of optical system to focus the light onto a detector. It would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical lens along the transmission path, between the beam diverter and the light detector in the optical transmission system of Moeller to converge and focus the transmitted light into the light receiver.

Regarding claim 20, Moeller further teaches an additional polarizer (4¹, fig. 2) can be arranged in the path (24, fig. 2) of output light beam not diverted by the light beam diverter (2, fig. 2), wherein the polarizer (4¹, fig. 2) being arranged to propagate light of predetermined polarization only, and to substantially prevent light other than of the predetermined polarization being transmitted by the apparatus (col. 3, lines 47-48, col. 4, lines 22-23).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moeller (US Patent No: 6,236,495 B1) in view of Islam et al. (US Patent No: 7,197,245) and in further view of Labrunie et al. (US Patent Application Publication No: 2003/0035164 A1).

Regarding claim 11, the modified optical signal light transmission system of Moeller and Islam differs from the claimed invention in that Moeller and Islam do not disclose the sample portion of output light beam comprises no more than 10% of the power of the output light. However, sampling portions of light beam such as sampling 4% or 10% of light beam for purposes of signal measurement and/or signal processing are well known. For example, Labrunie teaches an optical coupler (142, fig. 1) that couples or samples 10% of the optical signal transmitted by a line fiber (page 3, paragraph 0050, lines 1-3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical coupler, or an optical circulator, or an optical splitter that samples only 10% of the transmitted light to the transmission fiber, for the coupling of light (or for the circulator 2) in the transmission system of Moeller modified by Islam to selectively couples a specific portion of light to the transmission fiber to provide further signal transmission and/or signal compensation or signal processing.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on 9 to 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


M. R. SEDIGHIAN
PRIMARY EXAMINER